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A Dissertation
upon
The disease denominated Typhus fever

By John W. Jenkins of N. Jersey

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~~1792~~

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It is proposed, in the following Dissertation to give a concise description, of the disease called Typhus fever, as it occurred in the year eighteen hundred and fifteen, in the village and neighbourhood of Newton in the County of Bucks. Feeling conscious of my inability to do it with scientific precision; but confiding in the candour and generosity of examining committees, who are well aware of the disadvantages, under which, a young man, who has, just embarked in the science of medicine, must necessarily labour; I feel satisfied they will make every proper allowance, for the imperfection of the performance.

The disease of which we are about to speak, made its first appearance in the United States, in the year 1806; in the State of Massachusetts. ~~It~~^{It} traveling thence towards the South; it has since prevailed, at different times and in various places, through the middle States with peculiar malignity; proving fatal to numbers of the inhabitation in some neighbourhoods; whilst in others, it was comparatively mild, and more manageable. The last season, it appears to have prevailed with great violence in some parts of Virginia;

During which, it likewise occurred at Doylestown and
Buckingham, in Pennsylvania; and in Newton
and Hackensack in the State of New Jersey. No
situation, however healthy, appears to be exempt
from its ravages: nor no class of citizens, what-
-ever their occupation, or manner of life may be,
are secure from its attacks. Otherwise Newton
should be exempt, for there is not perhaps a
more healthy situation in the county of Bucks.
The surrounding country is highly cultivated,
and the inhabitants are most of them, industri-
-ous farmers; temperate, and in easy circumstan-
ces; consequently exempt from many of the cau-
-ses of disease to which the luxurious and the very
poor are exposed. There was nothing peculiar
in the season of the year 1814, when the disease
made its first appearance; except the winter
was perhaps, more mild and open, than usual:
there were several falls of snow, which did not
commonly lay more than two or three days, before
they were swept off by rain. The disease commen-
-ced its career with great violence the last of win-
-ter, and continued to infest the neighbourhood,
until the middle of spring; with degrees of inva-

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mortality, as various, the persons, who were
attacked, and the periods at which it occurred.
Some were seized with extreme debility, at the commen-
- cement, so as not to be able to help themselves; others
were first attacked with blindness, and insensibility
of the surface of the body, coldness of the extremities,
and different grades of delirium; many were warn-
- ed of its approach, by dizziness, tremor, and dull
pain in various parts of the body; and in some
it put on the more insidious, but not less fatal
garb of hysteria and catarrh. But as the warm
weather advanced, it gradually subsided; and dur-
- ing the summer entirely disappeared. It however
reappeared in the autumn, a few sporadic cases
occurred, and diseases generally, were less inflamma-
- tory than they usually are, at that season: partic-
ularly in the months of November and December,
during which the weather was changeable, and wet.

The winter of eighteen-hundred and fifteen, was
extremely ~~late~~, the ground was covered with snow
from the middle of January, until the seventh or
eighth of March. About the twenty fifth of January
the disease made its appearance in Foylston
and Buckingham, with its characteristic malignity.

^N
Not more than one eighth or tenth of those who
were attacked, when it first appeared recovered.
On the tenth of February, it was again observed
at Newtown; but it was much less fatal, and
perhaps less violent, than in the above-mentioned
places. It was principally confined to females
out of seventeen persons, who were labouring
under the disease at one time, only two were males.
This disposition to attack females continued during
its prevalence; those who were pregnant
were the least subject to it, but two cases were
observed during its existence. The manner of
attack was very various; but generally less
violent, than it was the preceding year. Though
some were seized with the most ungovernable
delirium; yet it more commonly came on, with
coma, pain in the loins, extremities, sides and head,
chills were common, and in some it made its first
appearance, by nausea and vomiting of a bilious
matter, accompanied with cold extremities.
These are most of the leading symptoms,
that occurred in the different persons, who were
attacked by this new and formidable enemy.

For many of the preceding and most of the

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Succeeding symptoms and observations upon the disease, I must acknowledge myself indebted, to the attention and politeness of my preceptor Dr. P. Jenks, who obliged me with a set of notes. Having given this brief view of the symptoms, that indicate the approach of the disease; we shall now proceed to give a more particular detail of them, as they occurred in the assimilating and relative functions of the assimilating functions, under which are comprehended, Digestion Absorption, Circulation, Respiration, and Secretion and excretion.

Digestion. This function was generally much impaired, the tongue was dry and covered with a muddy white or yellow crust, often of a dark brown or livid hue; and sometimes of a fiery red colour. The appetite was diminished or entirely gone; the nausea and vomiting, were often distressing, and commonly attended with some discharge of bile, which was sometimes of a dark or green colour, but more frequently natural. The intestines were usually, but little affected; a few cases occurred, in which a slight Diarrhea was observed; but they were seldom if ever attended with pain, sometimes slightly constipated.

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The Absorbents did not appear to partake in the disease

The Sanguiferous system. In most cases the heart and arteries, at the access of the disease, were increased greatly in frequency and slightly in force - 1. the pulse was often irregular and appeared to discover some hardness; but this was not universal, for it was sometimes diminished in force from the commencement of the disease: and even in those cases where it discovered the highest degree of inflammatory action, it would not admit of the least direct abstraction, without inducing a dangerous degree of debility. Hemorrhagy from the Lungs was not uncommon, few cases occurred, in which there was not, ^{at} some period of the disease, discharge of blood from them: frequently about the third or fourth day, sometimes earlier. The Breathing, was often difficult and usually attended on the first two or three days, with a short dry cough, which was very troublesome to the patient. The heat of the body was somewhat increased on the first days of the disease, but was most frequently of short duration, and usually preceded by a chill

Some pain and soreness of the breast ensued, and the respiration, as the disease advanced, not unfrequently became ~~extremely~~ laborious; producing great anxiety and dejection; which was strikingly depicted in the countenance of the patients.

The secretions and excretions. The secretions and secretory organs were very little affected: pain in the region of the liver was sometimes complained of, but probably, was more frequently the consequence of debility; than of increased action. There appeared to be a redundancy of bile in some cases, but if it was, as has been before observed, commonly natural. The kidneys were torpid, but seldom affected with pain; the urine was secreted in small quantity, and in some cases high coloured, but more usually natural. Sweating was not so common as in the preceding year, neither was it attended with as salutary an effect; it however sometimes occurred, and was accompanied with such an offensive smell, that it rendered the patients loathsome to themselves and their friends.

The Relative functions. Under this head are comprised the senses and voluntary motion.

The Brain was frequently very much disordered;

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and its functions in all serious cases, were carried on with difficulty. A violent delirium frequently occurred, during which the patients raved incessantly, and were with difficulty confined to their beds. This was always an alarming, and sometimes a fatal symptom; particularly if it occurred on the third or fourth day. It tended to exhaust the patients strength, and bring on an almost unconquerable degree of debility; and it often thwarted the expectations of their friends, and the designs of their physicians, as it not unfrequently, was extremely difficult to get them to take medicine. A low muttering delirium occurred in some cases, when the patient would lay ~~off~~ apparently, in a comatose state; muttering at intervals and uttering incoherent expressions. The eyes were often red and inflamed; sometimes, they had a muddy appearance, and in many instances had lost their accustomed sensibility. The hearing, this season was but little impaired, though deafness the preceding year was common. The functions of the olfactories were undisturbed. The taste was considerably deranged, as might be expected from the above mentioned state of the tongue. The sense of feeling was so much obtunded in many cases, that the patients appeared

to have lost almost entirely, their connexion with surrounding objects through that medium. The insensibility in some cases, was so great, that blisters and sinapisms did not excite a very unpleasant sensation.

Though the system was insensible to external impressions which at another time would have been painful, yet it was sensible to that pain, which was the consequence of the disease in the back, sides, and breast it ^{was} very distressing, and in the head, it was so severe, shooting from one temple to the other, that the patients, in many cases, were induced to believe, some person was piercing their throats with some pointed instrument.

The voluntary muscles were often called into violent action, as was hinted above when speaking of Delirium. The strength was so much increased, that it was difficult managing the patients. This however was of short duration, for the muscular strength in most cases, was speedily exhausted, and they became extremely weak and unable to help themselves. At this period, the action of the muscles not infrequently became irregular, spasmodic contraction of the *aglares* took place; twitchings of the eye lids

were likewise observed in some cases, and in others they fell as if unsupported, half closing the eyes: now unless some assistance were speedily obtained the grisly monster soon seized his prey.

Having given this brief account of the symptoms, which occurred in the different persons, during the prevalence of the disease, according to the arrangement we have adopted, we shall now proceed to offer a few observations upon the Diagnosis.

By proper attention to the preceding symptoms, with an eye to the laws of epidemics, it will not be found very difficult, to form a sufficiently correct opinion of the nature of the disease. The only ones with which a person would be in danger of confounding it, are, the Pleurisy, and the common Syphilitic fever of Dr Cullen. Mistaking it for the former, might be productive of disagreeable reflections to the physician, and the most fatal consequences to the patient: though in some cases, there may be some difficulty in distinguishing them; not by strict attention to the state of the pulse, which in the one is small and slightly hard, but yielding to pressure; whilst in the other, it is more full, hard, unyielding and less frequent. With regard to the latter, it is not of much importance to distinguish

them, for the method of cure is similar in each

The remote cause appears to be involved in obscurity, there is nothing in the situation of the place, as has been already observed, that will enable us to account for it; not nothing that will serve as a guide to our inquiries.

Yet from the circumstance of the disease prevailing so generally through the neighbourhood, and from its having affected so many persons at the same times, it appears somewhat probable, that there was some cause, however occult, existing in the atmosphere at the particular seasons and places at which it has occurred. Although I must acknowledge myself ignorant of that cause, not having had an opportunity of ascertaining by actual experiment, the composition of the air at the time in which the disease appeared; yet I can not help being struck with the analogy that subsists between many of the symptoms of this disease, and that, produced by inhaling carbonic acid gas. From this analogy, from the seasons at which it appeared, and from the state of the weather during those seasons; which was unusually mild and open: might it not, with some reason, be inferred that this was the cause? Particularly

when it is recollecte^d, that all these causes, which come
us to favour the decomposition of vegetables, and the
formation of this species of gas, were in full operation.
This together with the usual consumption of oxygen
at that season, by combustion and respiration; and the
consequent formation of carbonic acid, would necessarily
- by have a tendency to contaminate the atmosphere.
Vegetation, that grand Laboratory of nature, in which, there
are so many operations, subservient to the animal being-
dom carried on, being likewise suspended, gives still fur-
- ther probability to the hypothesis. The Predisposing cause.
Admitting the remote cause to exist in the atmosphere,
whether it shall be found, to be carbonic acid or any
other one, of the non respirable gases, or a combin-
ation of them, acting alone or in concert with some
other causes as grief, anxiety, intemperance of any
kind, or excessive fatigue, may produce a sufficient
degree of debility to predispose the system to the disease.
The Exciting causes. They are numerous and vari-
- ous; any substance acting, either chemically or mech-
- nically, upon a system already predisposed may
excite the disease. The same cause may act as remote,
predisposing and exciting, according to the ex-
- -tension of its intensity. Sudden transitions from

a cold to a warm atmosphere and *visa versa*; loss of rest from any cause, but particularly from attending on the sick; intemperance in eating or drinking, and giving a loose to the passions, often prove exciting causes.

With respect to the Proximate cause, I acknowledge myself profoundly ignorant; neither does a knowledge of it appear to be of much consequence, to the Physician who prescribes for the state of the system. Which seems to be satisfactorily proven, by the number that have existed in the imaginations of different authors. A lentor in the blood, spasm in the extreme vessels, and a convulsive or irregular action in the arterial system have successively prevailed, and their different authors, appear to have practised undeviatingly with the guidance of each with success.

The Prognosis. It is often of some consequence to the character of a physician, that he be able to give a correct opinion of the issue of a disease; as he is not infrequently, interrogated by the friends of the sick, concerning its probable termination: and if he should not be able to give them some satisfaction; or if he should, unfortunately give a false judgment, it will often injure him, in their esteem. Therefore it is of importance to observe

attentively the phenomena of diseases, as they tends to
life and health, or death; and by attending to the
following symptoms, we shall be enabled to form
a tolerably correct prognosis of the disease under consid-
eration. When the delirium occurs on the first day of the
disease, is ~~very~~ ^{not} violent, nor the debility very great;
when the breathing is not difficult, and the bleeding
from the Lungs, ~~is not~~ profuse; and when the vomit-
ing is manageable, the tongue not thickly furred nor
of a dark colour, and the torpor and insensibility
are not very great: by good attention and the proper
exhibition of medicines, we may reasonably expect
a speedy recovery. But on the other hand, if the
delirium occurs, on the third or fourth day of the
disease, be violent, and the succeeding debility very
great; if the system become torpid and insensible,
the tongue thickly furred of a dark brown or fiery
red colour; and if the difficulty of breathing be
considerable and that ghastly or anxious counte-
nance occur, the eye-lids falling over the eyes,
half closing them, the pulse of the ~~more~~ ^{more} drawn in
Towards the septum, and low muttering Deliri-
um occur, we may pretty certainly calculate
on a fatal termination.

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The cure. Often from slightly examining the pulse at the commencement of the disease, and from the pain in the side, which was sometimes acute the Physician would be induced to prescribe blood letting pretty freely; but these symptoms were delusive, and that prescription universally injurious, and sometimes fatal. Drawing blood in small quantities, was likewise adopted, but with no advantage, and it sometimes proved hurtful, by inducing an unpleasant and sometime an alarming degree of debility. It being observed that a spontaneous vomiting gave relief in many cases, led to the use of emetics, which was attended with the happiest effects. They often relieved or removed the pain and oppression of the breast, and never failed to clear the stomach from bile or any offending matter, that might be in it; and the patient always appeared to be relieved by their operation. Catharticks, were usually found useful; they often relieved the pain in the side, sometimes palliated the affection of the head, and always prepared the system for the reception of other medicines.

The advantages arising from the exhibition of sudorifics, the preceding year gave birth to the ~~to the~~ belief, that they would ^{be} beneficial in the disease of the present; but unfortunately the past experience

in this instance proved to be a false guide; for they were of little use, and perhaps in some cases injudicious, by causing delay in the exhibition of more efficacious remedies. Blisters and sinapisms were useful remedies. Blisters were applied to the sides with the happiest effects; they seldom failed to relieve or remove the pain seated in this part. Sinapisms were applied to the feet and ancles, with the effect of removing or mitigating the delirium and coma that occurred. The nurses and friends of the sick, became so well acquainted with this fact, that they often resorted to the use of them without the advice of the physician.

Although the above remedies, in many cases would be found sufficient to effect a cure, yet in all those which were violent, calomel was the unobscured spec, and the patients were never considered out of danger until a ptyalism was excited. This always removed the cough, and the pain in the side, if it continued after blistering.

It likewise relieved ~~the~~ the difficulty of breathing, and most of the unpleasant symptoms vanished at its touch. But it was necessary to give it in as large doses, as the patient could conveniently bear, internally, and likewise to apply it, liberally externally; in order to obtain its effects as speedily as possible, on account of the rapidity with which the disease ran its course.

Tonicks and stimulents were indispensall remedies
in completing the cure, as the debility which ensued,
was often the most alarming, and sometimes the more
dangerous stage of the Disease. Wine and brandy were
used very freely, and with the effect of raising the
little trembling pulse, making it more full and regular;
relieving the thirst, and supporting the sinki-
-ng powers of life, untill the more permanent
stimuli should have time to act. An infusion of
guasia, was given in many cases with advanta-
-ge; it assisted in restoring the appetite, and
preparing the stomach for the reception of a
nourishing diet; which was always essential.
The Peruvian bark and Chalybeates, in combi-
-nation with the spices, were given with the
happiest effects.

